For Private Circulation only

Pathways

Vol. X AUGUST, 1988 No. 3

A TRYST WITH NATURE (I)

—A Camp Experience—

by Raji Subbarayan
Bluebells School,
New Delhi.

"I know I cannot teach anyone anything; I can only provide an environment in which he can learn"—Carl Rogers.

An overnight camp in a forest, a camp not for just fun but to take young people closer to nature and open their minds, to accept Nature as their best teacher—this was an immediate outcome of reading a book by Carl Rogers. As the idea began to take shape an extract from Srimad Bhagwatham by Swami Prabharanandha, a conversation between Yadu and an Avadhuta, stimulated my thinking and gave me the confidence to go ahead. The extract is given later in this article.

The Delhi Tourism Corporation helped us choose the site. We visited a couple of D.D.A. forests, which had clearance from the Delhi Police and finally selected the one behind the Bahai Temple. The D.D.A. calls it "Picnic Hut Kalkaji", but the children who attended the camp have named it "Nehru Forest" since it is just behind Nehru Place. This site was one which I had wanted the children to be exposed to for a very long time. It is a striking contrast to the concrete jungle of the Nehru Place office complex. The site has almost all the land forms one could think of, an ideal situation to teach the first lessons of geography. It also offered the best learning ground for the much-talked-about "Save Your Environment" plans in which every child has a role to play.

The site was physically examined by me more than three times to ensure that the overnight stay was safe. Letters were sent to the Station House Officer of the Kalkaji Police Station to ensure police vigilance and protection. Additional security was organised from the school. The school doctor was also kept informed.

In the couple of meetings we had with Delhi Tourism officials, the tariff (Rs 120/- per head); the vegetarian food—three main meals, a breakfast and two teas—water, accommodation in tents, beds and bedding, additional activities like a film show, horse riding, the availability of saplings for planting and all other requirements were chalked out. Once I was confident about arrangements, circulars were sent out to parents of children of class IV and V. Being the first camp of its kind particularly for children of the age group 9-10 years there was initially a lot of reservation, but gradually the enrolment totalled 70, a good number to start off with. More than 10 staff members accompanied the childern.

Children were taught how to use a "check list" of necessary items given to them. They packed up their requirements neatly in small suitcases and bags. Many checked out their items before leaving the camp at the end of the second day. The checklist, which may interest readers, is given below.

1. **NO MONEY**
2. Identity Card
3. Plate, glass, spoon, paper napkins
4. Torch, cavas shoes, water bottle
5. Jump suit/track suit for yoga
6. Toothbrush, paste, towel, soap
7. One set school uniform
8. Blanket/warm clothes
9. Pencil, writing pad
10. Colour, paints, crayon, sketch pens
11. A tube of Odomos
12. A small packet of biscuits
13. Fruits which will keep for a day

Note:—Children were to be in school uniforms on both days.

Road maps and gate passes were issued to parents to enable them to meet their children at the camp. This meeting was most interesting. Some of the younger children who came to visit their older brothers and sisters refused to go back and we had to accommodate them also from early next morning. Parents tried to tempt their children with offers of dinner, movies etc., nothtng worked and they cotinued their day at the camp.

The activity web chart was prepared by a team of teachers. Group planning turned out to be an explosion of ideas. (I would like to incorporate this brainstorming even in day to day lesson planning).

A TRYST WITH NATURE

Language

* Interviews
* Storytelling
* Poetry Writing
* Conversations
* Experiences
* Fun with Words (Describing action, feelings)

Science

* Nature Walk
* Classification
* The Night Sky
* A Balanced Diet
* Collections for Herbariums
* Identification of plants and animals
* Water
* Pollution

Art and Craft

* Landscape painting
* Making Paper weights and bookmarks
* Paper flowers
* Collage
* Handicrafts

Social Values

* Respecting
* Cooperation
* Loving
* Caring
* Accepting
* Appreciating
* Being Independent
* Sharing
* Shouldering responsibility

Mathematics

* Addition, Subtraction, Multiplication etc.
* Measurements,
* Bills
* Area, Perimeter, Span, Pace,
* Conversions
* Ratio
* Fractions
* Percentage
* Time

Social Science

* What is a "democratic set up"
* Mapping
* History of Monuments
* Leadership

Games

* Yoga
* Aerobics
* Horse riding
* Jogging
* Trekking
* Football

The Schedule for the camp was drawn up as follows :

22nd March, '88

1.	Arrival at school	7.00 a.m.
2.	Departure from school	8.45 a.m.
3.	Arrival at the camp spot	9.00 a m.
4.	Settling down into tents	9.00 a.m. — 10.00 a.m.
5.	Free activities	

6.	Lunch	1.00 o'clock
7.	Siesta	1.30 — 2.30 p.m.
8.	Free Activities	2.30 — 3.30 p.m.
9.	Tea	3.45 — 4.00 p m.
10.	Parents' visiting time	4.30 — 5.30 p.m.
11.	Dressing up for dinner and the camp fire	5.30 — 6.00 p.m.
12.	Campfire activites	6.00 — 8.00 p.m.
13.	Dinner	8.00 — 9 00 p.m.
14.	Sharing Experiences	9.00 —10.30 p.m.
15.	Bedtime	10.00 —10.30 p.m.

23-3-88

1.	Getting ready for the day	5.30 a.m. — 7.00 a.m.
2.	Morning tea	6.30 a.m.
3.	Breakfast	7.30 a.m.
4.	Free activities	8.00 a.m. — 2.00 p.m.
5.	Lunch	
6.	Free activities	2.30 p.m. — 5.00 p.m.
7.	Packing up and tea	5.00 p.m. — 5.30 p m.
8.	Departure from camp to school	5.45 p.m.
9.	Expected arrival at school	6.15 p.m.
10.	Pick up time for parents from school	6.15 p.m. — 6.30 p.m.

NO CHILD WILL BE HANDED OVER TO THE PARENT FROM THE CAMP SITE

The programme was very flexibe. We did not want to impose an activity on the children, but wanted rather to create an environment where the children would lead us into the activity.

In a very friendly atmosphere we, the staff and students, learnt songs, dances and shared jokes.

The camp proved that each individual has enormous creative potential. A collection of individuals together turned out to be a power explosion, power to solve problems, overcome difficulties and power to create. Once released this collective power had no end and there was an endless flow of ideas. What is really worth mentioning is that there was always a sense of warmth and a prevailing air of positive cooperation, trust and spontaneity and also a sense of purpose. In a scene where this kind of an activity was operative there was no doubt a lot of noise but it was really beautiful to watch the teachers simply making things possible. Each one was an enabler, a facilitator who set up the structure for efficient group work and supported the students by her positive regard for them, by offering guidance and help if invited. Within the school building with several constraints this is not always possible, an outdoor environment gave scope for all this and much more. In this climate of learning, despite the noise, the movement is in pursuit of specified goals and within a structure accepted by the whole group.

To make this kind of learning possible certain strategies were adopted and proved effective.

1. A democratic stage was set up with each group selecting their representative for quick coordination. Every member of the group was of immense importance, the teacher was only a member of the group. All ideas and opinions were valued equally.

2. Listening skills—stories were effectively used here where the listener looked at the narrator, maintained silence, and responded to him naturally with gestures or expressions.

   a. A value was taught—if you value somebody then give them the gift of your full attention, when they are talking to you.

   b. Time is precious—clarity is improved; productivity is increased if active listening is there.

3. Brainstorming. A few main purposes were

   a. to generate a large number of ideas quickly

   b. to encourage creativity and lateral thinking

   c. to involve the whole group

   d. to demonstrate that working together can achieve more than the individual can do alone

   e. All contributions are accepted, no one was excluded. Often the teacher could not even notice who was not participating.

4. Ground rules were a must and were established in agreement with the students. So while engaging in introductory activities, the group actually experienced the ground rules in practice. They were such that they sustained the friendly and cohesive atmosphere in which student-centred learning was effective.

   Most important was—"It is OK to make mistakes, they are valuable learning points".

5. Open discussions were in plenty, giving them opportunities to argue, debate, express and also to have disagreements.

6. Affective learning was prevailing all the time, there never was an emotional vacuum. At all times children were experiencing feelings. Certain experiences at the camp brought to light a certain general mood or undercurrent in a group. It was of great importance to acknowledge that feelings exist, be an active listener and help out, without misinterpreting the mood and yet reaching out. Peak experiences of joy, discovery, sharing were also prevalent.

7. The democratic stage helped in decision making and problem solving which very often was done after discussions.

The integration of all this did not blind us to the main development of healthy social habits like loving, caring, sharing and forging relationships.

The modern world is the world of democracy where every citizen is given importance. It is they who make the government in a democracy and they run it for themselves. It is, as Abraham Lincoln has put it, a government of people, for the people and by the people. The organisation of the

camp was also in a democratic set up. Decisions at the lowest level were dealt with and solved by the children themselves along with the help of the group leaders. Matters which could not be solved by the children were taken to the teacher concerned.

One child did not have a bed to sleep on. He wanted to consult the teacher but the children finally decided to settle the matter themselves. Another child offered to share his bed with him.

It was found that the drinking water was not clear. As it was affecting everybody, it became a topic for discussion. The children reported the matter to the teachers who along with the representatives of the children went and reported to the authority concerned. Action was immediately taken.

Major decisions were taken by Ma'am Subbarayan. The sickness of a child was an upsetting event. The children along with their teachers discussed the matter with Ma'am Subbarayan and the child was sent back home.

The success of the camp and its smooth functioning was possible only because the responsibility was decentralized due to the democratic functioning of the students.

Highlights

The twelve tents, each housing approximately 6 students and one teacher, were given interesting names : Mighty Majestic, Forest Pillars, Red Sunset, Rippling Blue, Generous Shadows, Pretty Faces, Thunder Rumble, Melting Snow, Whispering Meadows, Lightning Flash, Flaming Orange.

Adventure set in on the first day at about 7.30 p.m. The camp went into darkness until midnight. After a memorable candle-light dinner, we gathered all the children close to the camp fire which was kept burning till the early hours of the morning. The children were relaxed, some on some others' laps. They were responding to the story "Nature the Best Teacher" with just m———m———m and gradually as the story progressed, most of them were fast asleep. A few who were awake shared their interpretations of the story, these kept us wonderstruck; I was sure a lot of the story was absorbed. Gradually the children were shifted to the tents where many continued their sleep while others woke up to explore the adventures of the "Still Night".

In the quiet of the night I sat by the camp fire recalling the childrens' interpretations; something I could not believe had happened. This happy moment sparked off an activity for the next morning.

After their exercises, jogging, nature walk, landscape painting and breakfast we gathered them around a shady tree and told them the story once more, this time we gave each one a copy of the story. After a general discussion they went back to the tents for group activity.

After about 40 minutes the children came out and the group leaders read out their interpretations which kept every staff member spellbound. We kept wondering ....."Do their little heads carry such mighty thoughts ?"

On the second day every child planted a tree and gave it a name. Before the activity we had a talk to bring out the various very personal feelings that are aroused. Time for reflection .....and they were asked to select a name for their beautiful tree-child, as beautiful as their own names given by their loving and caring parents. The activity was touching and the selection of names brought tears to the eyes of many onlookers.

In the evening they visited the spot again, to fix small flags with the tree names written on them. Some bid their saplings a fond farewell, kissing and conversing with their adopted "babies". Some of the names selected and the reasons for the selection were

* Sweet heart—Sweet hearts are always loving and smiling and so will be this plant (Gabor)
* Kalyani—One who spreads Kalyan everywhere. Generous and spreads happiness always (Swati)
* Knowledge—There is no end to knowledge and no end to the growth of a tree. It will inspire me to write more poems (Aman Kohli)
* Hope—We always hope for some good. The tree will hope that nobody cuts her off.

At the end of the second day we were overwhelmed by their responses. Our collection corner was flooded with drawings, poems, stories, jokes, cartoons, collections of rocks, seeds, twigs, shells and several craft items. Most of the poems and drawings were complete. Every valuable piece was kept under lock and key until school reopened in April.

A Tryst With Nature : We had not planned an exhibition at all, but the overwhelming response from the children spurred us into working another week giving finishing touches to their output. Their collections were classified under the following headings :

TRIBUTE TO GURUDEV—All literary work (Poems, experiences, conversation etc.)
TRIBUTE TO मैथिली शरण गुप्त—All literary work in Hindi
GRAND CHILDREN OF C.V. RAMAN—All Science activity
DR AMBEDKAR IN THE MAKING—All social science activity
IN THINKING WITH ARYABHATTA—All maths activity
LITTLE NEK CHANDS—All craft work. This included paper weights, paper flowers and book marks made from seeds, stones, twigs, leaves and other materials collected at the camp site.

To keep the happy memories alive, all the creative work was brought out as a newsletter called "A Tryst with Nature". The entire work of the exhibition has been now put into an album. Some activities at the camp and the exhibition were videotaped.

Parental reaction after the children went home and after the exhibition was yet another indicator of the value of our camp experience :

Respected Madam,

It was a wonderful experience for my child Smita to go away from home for an overnight camp. She learnt so many things in this camp. She learnt to do her daily routine independently. She learnt to sleep alone fearlessly. I was so happy when she returned home and she narrated all the activities she did during her camp. I wish she has more such experiences in future.

Thanking you,

Yours sincerely,
MALA

Dear Mrs. Subbarayan

I had gone to visit the children's camp when it was organised and I thought things were very well done and organised.....but it is this exhibition that takes the cake ! It is superb, the way the children's feeling and expressions have been given shape. There is no doubt that every single child enjoyed this camp and will carry the memories within their hearts for years to come. After all this is the stuff that childhood memories are made of ! My salute and heartfelt felicitations to the teachers, who bravely put up with our brats for a full 48 hours !!

On behalf of all grateful parents,
ANITA SONI

[To be continued.....Excerpts of the children's work are given in Part II of this article to be published in the November 1988 issue of Pathways.]

An Experiment in Cooperative Learning

The scene is familiar - One teacher facing forty-seven neatly scrubbed faces siting in orderly rows. The frustration of teaching large classes is a reality which I constantly struggle with. Sometimes, the classes are even larger, fifty students or fifty five ! It is, however, the reality most teachers in schools in this country have to accept and work with. How can a teacher ensure that every student sitting in front of him/her has a rewarding learning experience - it may be spelling, comprehension, writing a story, learning facts about the Delhi Sultanate, how to calculate time from longitude or the parts of a plant ? One is constantly searching for solutions, techniques and tools to teach large groups effectively.

When I ask a question, eight enthusiastic hands charge up, the right answers come brightly - "Me, ask Me, Oh, pleeease Ma'am, Me !" Where shall I pitch my lesson ? At the 10% of the group who are eager learners and lose the rest; at the 10% of the group who are slower than the others and consign the rest of the group to disciplined boredom, scribbling and day dreaming; or shall I teach to the average and lose the attention of the quick learners and those who need a little more time ? How can I help them all ? Good questions - no answers. Feeling frustrated at often becoming a teacher who teaches, than someone who could help every student to learn, I came to attend a workshop organised on Cooperative Learning by the Educational Planning Group on the 18th of February this year and conducted by a marvellous resource person, Dr. Guy Blackburn of USA. He also came to observe a Geography lesson which I took in Class VI where I found I was doing everything but help my students to learn together; teaching only one - third of the class.

What is COOPERATIVE LEARNING ? One answer to teaching large groups. A technique of helping students learn together involving every person in class. It is essentially a way of working in groups, but learning in a non - competitive, "all win" situation. There should be no losers if such techniques are used effectively. Every cooperative learning situation ought to have these key points :

- Individual accountability
- Positive interdependence
- Interaction between all the students

After using the cooperative or group learning techniques I found as had been emphasized in the workshop :

- Student learning taking place
- A change in students' attitudes
- Development of positive social skills
- Thoughtful learning or output

Working in groups is something all teachers do, but for the first time after attending the workshop, I realized that group work or cooperative learning is possible while teaching almost every lesson. I could work in groups without very special planning. It is an extremely flexible approach.

The first lesson I used it for was a comprehension lesson in Class V. It was a follow-up of a lesson from their English text. I used a grouping of fours. The physical arrangement of the furniture in the classroom did not waste more than a few minutes. The act of rearranging the classroom was a learning experience in courtesy and cooperation for most of them. In subsequent lessons, the groups learnt to rearrange the classroom quickly, without any disruption or fuss.

The grouping was also random, as they were sitting; the chairs were just turned around and soon the class was in groups of four.

The children were asked to go over the story "The Men on the Moon" together and try to solve any difficulties or look up words with each other's help, using a dictionary if necessary. Meanwhile, I put up some comprehension and vocabulary questions for all the groups on the blackboard. They were given 15 minutes to find, discuss and write down the answers individually. While giving instructions, I emphasized that they had to SHARE and work. 5 extra points were to be added to the score of every member of the group that scored all correct in all four questions. They were soon working intensely and while walking around the room I noticed in some groups, some children (high achievers) actually helping the slower members of the group to also achieve the target. They explained and helped each other. Of course, there were arguments in some groups, but these soon realized that they were losing time and the natural leaders that emerged in most groups urged the group to start working. They then exchanged papers and scored each other's work from the checklist I put up on the blackboard. I pointed out that correcting someone's work was an extremely responsible task. I trusted them to do this well and the person who scored the paper had to put down his/her initials after marking. This immediately made them feel very important. "May I sign ?" "My own name ?" were some of the important questions that were fired at me. It took 10 minutes to score the exercise. Two got the bonus of 5 points extra for every member of the group. Everyone thanked the members of the group they were working with and put the furniture back in time for the next class. The remaining 5 minutes were used to discuss how they felt doing work in groups, helping each other learn and finding out why one group was unable to complete the exercise on time. I have subsequently used this to help learn spellings, vocabulary exercises, write stories, do workbook exercises and more creative writing. One Interesting point about spelling was that children who had always been poor spellers now scored full marks !

The next lesson was Geography with Class VII. We were doing a general overview of the mineral resources and allied industries of South America. The objective of this very short capsule was to learn where the major mineral resources of S. America are and to locate them on a map of S. America.

I asked the students to work in pairs. This did not involve any change in the physical arrangement of the furniture. The group of 34 children was already sitting in pairs in their rows, as is found in many classrooms.

I put up on the blackboard a table showing the major resources, their location and the allied industries. The students learnt the location by using a map given in their texts. The pairs (AB) were asked to teach each other this information. The children were asked to teach other this information - 12 mineral resources. The first six were taught by Student A to Student B and vice versa for the remaining 6. At the end of 10 minutes both A and B would know all 12. When the time was up I announced a short test just to check if they had learnt the facts.

Every student was given a blank map of South America on which they marked the location of the minerals as I called these out. The test was graded by the students themselves by exchanging papers. There was again a **group** reward, extra points for both members of the pair who scored full marks.

Again, it was easy to see that at least 9 pairs achieved the bonus and the others did not have many errors - not more than two/three. Many of the students who scored full marks were those who had difficulty in remembering geographical facts. All the pairs started work on time. There was an air of alertness about the children and the lesson was quickly revised. The test was an instant feedback. The groups **learnt faster when they were not taught.** In teaching each other, group learning made certain that there was 100% participation. It absolved both teacher and students from the chalk and talk routine.

I realised that I had been using group learning techniques earlier but the workshop helped me to use them more and more effectively, especially for routine learning of facts.

Types of Groups

You may find it convenient to use different types of grouping for various lessons. Students can be grouped in :

- **Pairs (Study and Share)**
- **Pairs of Pairs**
- **Triads**
- **Fours**
- **Fives**

In practice, groups larger than five sometimes become clumsy and not easy to handle. I have often noticed that a group larger than five is ineffective as it tends to disintegrate into sub-groups.

Grouping can be **heterogenous** or **homogenous.** I have been using heterogenous grouping as I find, within my experience, that such grouping works powerfully and is more cooperative than homogenous grouping.

Selection — Groups may be selected at **random** or be **criteria based.** Sometimes, the students like to work in their own groups and could be allowed to select their own group members. I have often found that high achievers tend to come together. To make more effective groups the teacher may select the students who should work together. It depends on the children you are working with and the kind of learning capsules you have planned.

Group Rewards — One of the keys to successful group learning is the use of **group rewards.** I have used quizzes, team games and class tournaments but find that these quickly become competitive. Rewarding the entire group (Pairs, Triads or Fours) soon breaks this intra-group rivalry. When working in groups, it is best to emphasize that **we aim at all of us achieving** and **all of us getting rewards. Every group works to get a pat on the back for every one.**

Time — No group work should be allowed to go on indefinitely. Every group learning exercise must have a definite time limit - 5 minutes, 10, 15 or 20 minutes depending on the objective of the lesson. If not timed, interest begins to flag, groups disintegrate and the lesson loses impetus.

Growth of Positive Social Skills — One of the important aspects of **cooperative learning techniques** is that they encourage the growth of children in a powerful way. Trying to learn together teaches social skills. After the first two lessons, I found it useful to give students guide lines before starting work in groups. The guidelines are even more useful when displayed in the room as reminders. Here is what I put up :

I. **Take Part.**
II. **Stay on the Topic.**
III. **Listen to Others.**
IV. **Encourage Everyone in the Group to Participate.**
V. **Change Roles - You Don't Always Have to Lead or Just Listen.**

VI. Discuss How the Group Functions.

VII. Work to Help the Group Succeed.

VIII. Speak Softly.

I have found it very useful to discuss with the students how the groups worked before closing the lesson. With most student groups, I find them able to discuss and analyze why their group functioned well or did not function effectively.

What is the Role of the Teacher in Group Learning ?

An observer and a guide. Whenever I am tempted to dominate or teach, I remind myself that my goal is to help every child in my class to learn for his/herself. The teacher moves quietly in and out of the groups watching offering, help if asked for, always guiding. It is the easiest thing to give the answers but groups normally solve their own problems. If I find that a particular group is not working effectively or taking time to settle down, I keep the group together for at least two more exercises and find that it has often gelled together.

One last point to emphasize is the need to remind all members to thank each other before the group breaks up. It may sound artificial, self-conscious or even forced but it makes certain that we learn never to take each other for granted.

Group learning is particularly useful in training for values and helping children to arrive at a value system of their own and more important to have thought about it and discussed why. It has worked for creative writing exercises at all age levels especially as a pre-writing exercise.

Cooperative Learning I found is just that. We all use, it but now I use it consciously - it is easy it is flexible and works into any timetable or lesson span.. It helps me to view myself not as a teacher but some one who helps students to learn.

BINA MALHOTRA
Sardar Patel Vidyalaya
New Delhi

FUN 'N' GAMES WITH PHONICS.

The aim of these activities is to develop in children the direct association between the sound of the letter and its symbol in isolation; and association between the sounds as heard in words and seen in the letters.

1. **The Direct Method**— Familiar guessing games—e.g.— I am thinking of a word beginning with **S** or I spy.

   Allow the children to take turns.

2. **Repeat three or four words**— e.g. sit, stand, swim, jump and ask which word does not begin with **S**. Do this several times, altering the position of the consonant **S** to the end and the middle of the group. After much practice of the above tell the children that you are going to draw a picture of **S** and suit the action to the word. Allow the children to see how you write the letter. Pronounce it (by its sound name of course) as you write it. Ask individuals to say the letter. Then ask the children to write the letter on individual slates or on top of the page in their books and draw and stick pictures of things beginning with **S**. Ask each child to name his/her drawings and pronounce the letters with which it begins. If the children cannot write, the teacher will have to set the work in their books.

Individual work sheets would be helpful at this stage.

3. **The Story Method**— Stories should be directly related to the immediate environment of the children to make the stories really worthwhile—e.g. Rita's mother went to hospital to have a baby, etc. When Rita's baby brother/sister saw her he/she said—and this is a picture of what baby said. Teacher writes the letter on the blackboard.

4. **The Flash Card Method**— Show a large picture with the symbols written clearly underneath. Have an oral conversation about the picture. No mention is made of the symbol. Turn card and show just the symbol without the picture Now introduce the sound. The symbols can be mounted with sand paper and the children touch and trace the symbol while saying it. Individual work cards would help.

5. **Hide and Seek Game**— Suppose **D** is the letter taught, it is hidden in a pack of review cards. As the teacher flashes them one by one the children watch attentively. When the right letter is flashed the children chant the sound.

6. **Circus or Cinema or Bus etc. Game**— The teacher prints symbols on slips of paper—these are tickets to a make believe circus or whatever which is situated in one corner of the room. Before the children can enter they must tell the teacher what is on their tickets.

7. Playing Game -- The teacher makes several cards containing the pictures of objects in the classroom—floor, desk, window etc. The children match the initial letter to the picture.

3. Lotto Game— In this game each player can win in every round. Each card has pictures of nine different objects. The teacher calls out other words beginning with the same sounds and each player covers the corresponding pictures on his card with counters or letters. When eight of the nine words have been called the pictures left uncovered in each card should all represent the same letter. At the end of the game as each player names his remaining pictures the teacher can judge whether the cards have been properly filled.

9. **Black Board Games—Post Office**—the blackboard is filled with "letters" written on envelopes. The children must guess the right sound to receive a letter which the teacher pretends to give to each child as she guesses the right letter.

Catching a letter—Place letters on the board and call out for one. The children have to keep perfectly still it comes to the right one. When the pointer touches the right letter they clap their hands and say the sound of the letter.

Flying Bird—Draw on blackboard a telephone wire connecting two poles. On it place letters for birds. The teacher selects the bird to fly away—saying fly away "n". The child erases each letter as the sound is given.

10. **Lucky Dip**— A very popular game **Toys**—Collect toys (old) from class/friends or buy them from a shop. Label them and put the toys in an old pillow case or non-transparent bag (plastic). The children dip into the bag and take a toy without looking at it. Give them a few minutes to "savour" the toy and talk about it amongst themselves. Then call out—"bring me the toy that says d etc.

(Good for reading with matching names).

—Contd. on Page 14

Science Activities Using Paper (III)

Dr. Lalit Kishore
Navoda Vidyalaya Samiti,
Secunderabad 500 026

Activity No. 14

Make a small paper container and fill it with water. Make sure that there is no leakage. Heat the container on the candle flame for sometime. What do you observe and why ?

Activity No. 15

Take a piece of stiff black paper (5cm × 5cm) and at its centre pierce two fine-holes using a fine needle. The holes should be made as close as possible. Stand 5 metres away from a 100 W. 220 V lighted bulb. Close one eye and look at the filament of the bulb through the holes in the paper from the other eye. What do you observe and why ?

Activity No. 16

Make a stiff paper ring (4cm diameter) and a paper tube (1cm diameter; 50cm length) from a newspaper Hold the tube vertical in one hand and slip the ring on to the tube. Rotate the tube so that has a conical motion. Slowly increase the speed of rotation of the tube. What do you observe and why ?

Activity No. 17

Make 1cm long cylindrical tubes of different diameters from 25 paper pieces of 1cm × 3cm size. Put the tubes in a beaker. Shake the beaker well sideways and up and down. Look at the distribution of the tubes in the beaker. What do you observe and why ?

Activity No. 18

Make a paper ring (10cm diameter and 3cm rim width) and make two holes (1cm diameter each) at two diametricalty opposite points on its rim. Pass a tube (0.5 cm diameter; 20 cm length) made out of newspaper through the holes in the ring. Hold the tube vertical and spin the tube Look at the shape of the ring when the tube is being spun. What do you observe and why ?

Activity No. 19

Make three paper tubes of 1 cm diameter out of newspaper—two tubes of 15 cm length and the third one 8 cm length. Place the smaller tube on the table and at its centre fix the other two tubes with cellotape slanting downward at an angle of 30°. Support the smaller tube on your finger tip in turn at its two ends. What do you observe and why ?

Solutions to Problems in Activities With Paper (II)

Activity No. 8

Observation : The tube gets straightened.

Reason : The air when blowing into the tube moves it in one cyclic direction and as a reaction to it, force is produced in the opposite cyclic direction. This straightens the tube.

Activity No 9

Observation : The wooden ruler snaps.

Reason : Air pressure on the paper is able to hold the portion of the ruler on the table, while the sudden impact on the portion sticking out, breaks it.

Activity No. 10

Observation : The paper balls jump up and down.

Reason : Sound produces vibrations in the membrane.

Activity No. 11

Observation : A disturbance moves along the paper helix.

Reason : In a wave motion, it is the disturbance which is handed over from one particle to another without bodily movement of the medium from one place to another.

Activity No. 12

Observation : A loud sound is heard at some position of the disc in the tube.

Reason : For some length of the column in the tube, its natural frequency becomes equal to that of the tuning fork and resonance is produced.

Activity No. 13

Observation : The paper cylinders reach the other end of inclined plane at different times.

Reason : The rotational energy depends on the distribution of mass in the cylinders or their moment of inertia.

—Contd. from Pape 12

11. **Rhymes and Jingles** also help tremendously as the children enjoy them so much—e.g.— When teaching the sound "p".

"I am the music man
And I come from far Japan
And I can pla-ay".
"What can you pla-ay ?"
"I play the piccolo
Picco, picco, piccolo
Piccolo, piccolo.
Picco, picco, piccolo,
Picco, piccolo."

Another speech rhyme for the "rrr" tongue roll and the breathy "hhh" variety of pitch :

Rumbling, rolling down the hill,
Rumbling, rolling past the mill,
Rumbling, rolling in the snow,
Rumbling, rolling off we go.
Huffing, Puffing up the hill,
Huffing, Puffing past the mill,
Huffing, Puffing in the snow,
Huffing, Puffing off we go.

(Reproduced with permission from **Teachertalk**, Nov., 1987 Issue)

TEACHERS' CENTRES

— An Experiment in In-Service Training —

Developments in education, especially in the last thirty years or so, have been so numerous and varied that it has become difficult for a practising classroom teacher to keep track of them. And yet, in order to make the teaching - learning process interesting and effective, a teacher must :

* be receptive to innovative ideas and new techniques.
* attempt to adapt and adopt these in his/her classroom.
* constantly keep up-dating himself/herself.

An innovative teacher is often a non-traditionalist; he or she is creative, constantly on the look-out for solutions to problems, continually seeking to acquire new professional skills and knowledge. What does one do about the teacher who is comfortably settled in a rut, disinclined to up-date himself/herself, who is quite satisfied with doing this year exactly the same as was done last year or the year before ? Worse still, such a teacher is liable to be doing the same things many years into the future !

In-service training is the obvious answer. However, many problems arise : What type of courses ? Short term or long term courses ? How frequent ? Who will attend these courses ?

This paper, presented at the CBSE Conference of October 1986, attempts to describe some of the efforts of schools, particularly in Delhi, to deal with the problem of continuous in-service training by setting up Teachers' Centres.

What is a Teachers' Centre ? Its functions are multifarious. It is :

* **A Resource Centre** where teachers can borrow books, audio-visual and other teaching aids. This facility may be extended to teachers in the school where the Centre is located, as well as to other known teachers from schools in the neighbourhood. Expensive equipment (like projectors) may be used at the Centre itself, and teachers may bring their classes to the Centre, with prior notice. Cyclostyling facilities may be made available at a nominal charge which covers the cost of materials.
* **An In-Service Training Centre** where teachers are invited to learn about creative or innovative tehniques, and to up-date their knowledge about their subjects.
* **A Centre for the Development of New Materials** which help teachers function more effectively. These are usually curriculum materials which make learning more meaningful. Charts or posters, worksheets, taped programmes and other teaching aids may also be prepared.
* **A Workshop** where tools may be made available to teachers for preparation of aids.
* **A Display Centre** where work done by students as well as teachers is on view and will generate more ideas and discussion. Exhibitions of books and different kinds of teaching aids may also be periodically arranged.
* **A Meeting Place** for teachers, principals and others involved in education. Apart from formal programmes, such informal meetings lead to an exchange of ideas; to the sharing of day-to-day problems and their solutions.

In India, to the best of our knowledge, there are Teachers' Centres functioning at the following places :

1. The Educational Planning Group
   St. Xavier's School,
   4, Raj Niwas Marg,
   New Delhi-110054

   Convenor : Bro. Ittoop
   Principal, St. Xavier's School
   Coordinators :
   Mr. Jose Paul
   Mrs. Gayatri Moorthy
   Tel. 252-0046

2. Springdales Teachers Centre
   Springdales School
   Pusa Road,
   New Delhi-110005

   Director :
   Mrs. Saroja Sundararajan

3. Ramjas Teachers' Centre
   Ramjas School
   R. K. Puram, Sector IV
   New Delhi-110022

   In-charge :
   Mrs. Keerti Jayaram

4. Progressive Educational
   Techniques Society
   (Teacher' Centre)
   7, Middleton Row
   Calcutta-700071

   Coordinator :
   Ms. Gopa Bagchi

5. Teachers' Centre
   Presentation Convent
   Church Park
   Thousand Lights
   Madras 600018

6. Teachers' Centre
   Padma Seshadri Bala Bhavan
   Sr. Secondary School
   No. 12 Thirumalai Pillai Road
   Madras 600017

   Director :
   Mrs. Hema Srinivasan

This article describes briefly the variety of the useful, practical, in-service training programmes conducted by the Delhi Centres since they started functioning.

The Educational Planning Group

Set up in 1976, The Educational Planning Group is a part of St. Xavier's School. The staff consists of two full-time coordinators, one office superintendent and one assistant. The Principal of St. Xavier's School functions as the Convenor, E.P.G., and guides its working.

In the past ten years the EPG has concentrated on certain major areas. These include :

i **The Introduction of Environmental Studies as An Approach to Teaching in Primary Classes:** A large number of programmes have been held in schools to help teachers appreciate that the inculcation of communication and learning skills is the real basis of education. The programmes are planned to show them how this may be done by means of a child—centred, activity—based style of teaching, using opportunities and elements found in the local environment.

ii. **Improving the Teaching of Science:** Programmes in this area have focussed on the use of low-cost, throw-away materials for improvised experiments. This hands-on approach aims at overcoming the handicap created by the absence of a conventional laboratory and creating an awareness in both teachers and students that 'science is all around us' and is not confined to either the text-book or the laboratory. It also helps by creating questioning, exploring and other science attitudes.

iii. **Understanding and Improving the Teaching of Mathematics in the Primary School:** Our programmes have helped teachers clarify their own concepts and evolve more effective ways of communicating these to the students.

iv. **The Promotion of Innovative and Better Methodology** in the other subjects taught at school level—music, art and craft, languages, social studies.

v. Some programmes are planned to help teachers up-date their knowledge in their own subjects—through lectures given by experts in the field.

vi. **Syllabus Improvement Programmes :** We have been fortunate in receiving encouragement from the CBSE and teams of teachers have worked on clarifying and stating the syllabi with greater precision.

iiv. **Teacher Motivation Programmes** train teachers to analyse their work in terms of behavioural objectives in the cognitive, affective and psychomotor areas of learning. Sessions on building better interpersonal relations with colleagues, school administrators and students are also conducted.

viii. **Attempts to impart Effective value Education:** Programmes involving teachers have trained them in newer techiques to use with their classes. A collaboration with the Sai Education Trust, has helped us to conduct programmes of this kind for primary teachers of the Municipal Corporation schools of Delhi. An enormous number of short term leadership camps and training programmes for students have been conducted.

ix. **The Teachers' Centre** : On the campus of St Xavier's School, Delhi, the Educational Group has set up in 1978 a learning resources centre for teachers. It provides a place where some of the programmes are conducted. A libra.y of

useful books, some audio-visual material and equipment are available on loan to teachers from local schools. Cyclostyling and typing facilities are available for the duplication of materials. The office of the Educational Planning Group functions at this centre.

x. **The Production of Resource Materials** to help teachers. A list of materials which are available at the Educational Planning Group is given later.

The Nature of Programmes

Programmes may be conducted at the Teachers' Centre itself or at any other school which is willing to play host. For us, at the Educational Planning Group, this is important as our school is located rather far away from residential areas and teachers find it difficult to come to us after school hours.

Short programmes usually last 2 to 3 hours and are held immediately after school hours, say from 2.00 p.m. onwards. Longer programmes may be of 4 or 5 days duration. Some are held at the requests of schools and during their normal working hours.

Some programmes fulfil a special need expressed by teachers. For example Biology teachers who completed their post—graduation about ten years ago sought assistance in updating their knowledge. This was arranged as a series of lectures by subject experts.

Most programmes, however, are 'workshops' aimed at developing skills/materials which are **immediately and easily usable in the classroom.** Teachers much prefer **doing** something on their own — **with hands or head** — rather than listening to lectures. The most beneficial outcome of these is that having found they can do an experiment or project on their own, the participants are less hesitant to try it out in their classrooms. The success of one such attempt often **motivates them** to come back willingly for another session. This motivation is an important aspect. Teachers who have attended a course merely because they have been ordered or deputed to do so, begin to see the usefulness of such in-service programmes.

A word about our resource persons. **Teachers can often learn a great deal from each other.** Difficulties of transport and varying school hours are factors which usually prevent meetings between teachers. Programmes at the Teachers' Centres provide opportunities for such meetings. Often a teacher can function as a resource person at a programme and share with others new ideas/projects undertaken by him/her in the classroom. From such meetings major projects often grow. At one such meeting of Home Science teachers of Class XI/XII, the absence of a textbook suitable for Indian students was mentioned. With encouragement, a team of eleven teachers got to work and in a year's time produced two textbooks - one on Food and Nutrition, the other on Home Management. These were commercially printed and are now used widely. Hindi translations of the same have been brought out. This long-term programme paid enormous dividends in terms of self-confidence and the professional growth of that team.

Outreach Programmes

In order to carry some of our ideas into wider spheres, the Educational Planning Group has sought to establish and maintain links with agencies like the National Council for Educational Research and Training, the Central Board of Secondary Education and other teachers' centres of Delhi. We have worked with the Education Department of the Government of Madhya Pradesh, National Institute of Public Cooperation and Child Development, Centre for Cultural Resources and Training (both government run agencies), the National Museum of Natural History, the National Progressive Schools' Conference, the Municipal Corporation of Delhi and

the Sai Education Trust. The British Council was most helpful in our early days in providing us with the services of numerous visiting resource persons. Max Mueller Bhavan has also helped us in a similar manner.

As part of the process of reaching out to help the less privileged schools in smaller cities and towns, the coordinators of the Educational Planning Group have travelled to places like Ludhiana, Lucknow, Aligarh, Kasauli, Bhatinda, Karnal, Jagadhari, Jaipur, Dehra Dun, Mussoorie, Kotdwar (Garhwal), Simla and Khatmandu. However, it is becoming increasingly difficult to move outside Delhi owing to the demands on our time and personnel from local schools. To overcome this, we do no occasions invite teachers from nearby cities to join programmes being held in Delhi.

The Teachers' Centre

Springdales School :

This Centre, started in 1980, has done much useful work in the areas of Language teaching, mathematics and environmental studies. Outlines of projects for the innovative teaching of English and worksheets for remedial teaching in mathematics have been prepared. A series of environmental studies kits for use in primary classes are among the interesting items produced. Each kit consists of display material, work cards, teachers' cards and instructions. The activities are based on places and things commonly available in the Indian environment.

The Centre provides a meeting place for teachers during school hours and its director is able to help them with a variety of teacsing aids. Enrichment material need for student use is often duplicated here and an overhead projector with several subject-related transparencies is handy for frequent use by teachers.

The Ramjas Teachers' Centre

This centre has a large variety of teaching aids suitable for primary classes gifted to it by the British Council when it was started. These are accesible to the teachers for classroom use.

Apart from conducting programmes for teachers from other schools, a number of short programmes for teachers of Ramjas School are continually organised.

The coordinators of the three Teachers' Centres in Delhi remain in close touch with each other. This ensures that programme dates do not clash and overlapping of areas for workshops is avoided.

A list of the materials produced by and available at these Teachers Centres will be available in the next issue of Pathways.

Starting a Teachers' Centre

Having seen for ourselves, the small but significant ways in which Teachers' Centres in Delhi have contributed to the professional growth of the teaching community here, we would earnestly recommend that schools outside our city should also consider possibilities of cooperating among themselves to set up such ventures. We would be happy to help in whatever ways we can.

What is needed to start a Teachers' Centre ? Obviously, the school (or other institution) will have to set apart at least one medium-sized room for the activities of the Centre. Bulletin boards, shelves, cupboards and other storage space, a few chairs and tables, a supply of electricity and water are required. The Centre needs to be located at a place which is easily accessible to teachers by bus or other forms of public transport. This is important as many of the programmes may by held after school hours. Those who attend programmes or visit the Centre must be able to get home without undue difficulty. Extra furniture requirements, like chairs and tables may be borrowed from classrooms for programmes.

The prime requisite however, is the right person or persons, to run the Centre. The director or coordinator of the Centre's activities should be dynamic, interested in education, in innova-

tion and a wide variety of subject areas. A small group of teachers could also manage the activities of the Centre with active help from their Principal. Some secretarial assistance will be needed to look after the despatch of circulars, and the correspondence. Funding for the salaries of personnel, travel expenses incurred and stationery could be shared by a few schools. It might also be able to obtain a grant from larger organisations. Usually, the sponsoring schools pay for the teachers' transport to and from the Centre as well as course fees, if any. The course fees are generally low. The intention is mainly to cover expenses incurred on materials (stationery, cyclostyling) catering and payment of an honorarium/travelling allowance to visiting resource persons. Thus most of the programmes should be low budget programmes with a strong emphasis on their relevance to classroom teaching and on the professional growth of the teacher. Obviously the schools which get together to run the Centre must believe in and be committed to the cause of in-service education. They must be prepared to give the Centre time to establish itself and prove its worth.

—**Mrs. Gayatri Moorthy**
Coordinator,
Educational Planning Group

Materials Produced by The Educational Planning Group

1. PATHWAYS— a quarterly Newsletter for teachers featuring articles describing practical experiments and innovations tried out by them in classrooms along with other information of interest to teachers.
2. ME & MY WORLD— An Idea Book for Teachers of Environmental Studies in Primary Classes- new reprint will be available shortly.
3. FOOD & NUTRITION ; HOME MANAGEMENT— textbooks for students of Classes XI and XII. Hindi versions also available.
   Copies from the publishers :
   Arya Book Depot, 30 Nai Wala, Karol Bagh, New Delhi-110 005.
4. AN ENVIRONMENTAL STUDIES RESOURCE PACK— gives the background on the use of an environmental studies approach to learning in primary classes, and ideas for implementing this in the classroom. New version being prepared.
5. SCIENCE EXPERIENCES FOR PRIMARY CLASSES—ideas for improvised experiments.
6. UNDERSTANDING PRIMARY MATHEMATICS
7. MATHEMATICS FOR PRE— PRIMARY & CLASS I— Material prepared for use at our workshops. Clarifies concepts of the teacher and suggests graded steps to be followed with students.
8. BEHAVIOURAL OBJECTIVES AND HOW TO USE THEM— also used at our workshops. Guides teachers in spelling out their objectives clearly and working to achieve the same.
9. HUMAYUN'S TOMB— A collection of worksheets for a project, suitable for the middle school, may be used as a model for similar studies elsewhere.
10. STRAW EXPERIMENTS
11. EXPERIMENTS IN ELECTRICITY
12. SCHOOL PROJECTS IN ELECTRONICS
13. INVESTIGATORY PROJECTS IN PHYSICS— Material developed by Dr. Lalit Kishore. Suitable for senior classes.
14. SONGS FOR PRIMARY CLASSES
15. LET'S SING— Songs for the young - developed and presented at a workshop by Ms. Madhulika Saran.
16. GAMES FOR PRE-PRIMARY & KINDERGARTEN CLASSES
17. ENCOURAGING CREATIVITY IN CHILDREN
18. A SIMPLE GUIDE TO DRAWING ON THE BLACKBOARD
19. FESTIVALS OF INDIA— gives stories and legends associated with major celebrations of all communities.
20. ASKING MEANINGFUL QUESTIONS IN SCIENCE
21. LEARNING SKILLS IN PRIMARY CLASSES— under preparation
22. भाषा ज्ञान—खेल-खेल में
23. परिवेशगत अध्ययन-एक परिचय—under preparation

Printed at : Adarsh Printers, Kotla Mubarakpur, New Delhi-110003. Phones : 624140, 692139
for the Educational Planning Group 4, Raj Niwas Marg, Delhi-110054